

Checklist of the *Clubiona japonica*-group spiders, with the description of a new species from China (Araneae, Clubionidae)

Hao Yu^{1,3}, Jianshuang Zhang², Jian Chen³

1 College of Chemistry and Life Sciences, Integrated Mountain Research Institute, Guizhou Education University, Guiyang, Guizhou, China **2** School of Life Sciences, Guizhou Normal University, Guiyang, Guizhou, China **3** Centre for Behavioural Ecology and Evolution (CBEE), College of Life Sciences, Hubei University, Wuhan, Hubei, China

Corresponding authors: Hao Yu (insect1986@126.com); Jian Chen (chen.jian_hb@foxmail.com)

Academic editor: Cor Vink | Received 22 June 2017 | Accepted 18 October 2017 | Published 9 November 2017

<http://zoobank.org/9873F0E2-011F-4EDE-AB64-B9F56BFAE9AC>

Citation: Yu H, Zhang J, Chen J (2017) Checklist of the *Clubiona japonica*-group spiders, with the description of a new species from China (Araneae, Clubionidae). ZooKeys 715: 1–16. <https://doi.org/10.3897/zookeys.715.14645>

Abstract

In the present paper, a worldwide checklist of *Clubiona japonica*-group spiders is provided based on published literature and authors' collections. A new *japonica*-group species, *Clubiona grucollaris* **sp. n.** (♀♂) from Guizhou Province and Hainan Island of China is diagnosed, described, and illustrated. A distribution map of this species is given.

Keywords

catalogue, *Japoniona*, Sac spiders, taxonomy

Introduction

The genus *Clubiona* Latreille, 1804 contains 495 catalogued species and is widespread throughout most of the tropics and temperate regions of the world (World Spider Catalog 2017). Due to the high species diversity of *Clubiona*, several infrageneric classifications have been proposed by taxonomists, and therefore *Clubiona* species were assigned to a series of species-groups and/or subgenera (Simon 1932; Gertsch 1941;

Lohmander 1944; Edwards 1958; Dondale and Redner 1976, 1982; Mikhailov 1990, 1991, 1995, 2002; Deeleman-Reinhold 2001; Wunderlich 2011).

Japoniona was established as a subgenus by Mikhailov (1990), including only one species-group: *japonica*-group. Later, the subgenus *Japoniona* was suppressed by Deeleman-Reinhold (2001) and reverted to *japonica* species-group. In the same book, Deeleman-Reinhold (2001) carried out intensive research on this group's limits, supplemented some characters to support the monophyly of the group, and provided a checklist of *C. japonica*-group species from Southeast Asia. During the past decade, at least nine species belonging to the *japonica* species-group were reported and described from southeast Asia, China, and India (Dankittipakul and Singtripop 2008; Jäger and Dankittipakul 2010; Dankittipakul et al. 2012; Keswani and Vankhede 2014; Wu and Zhang 2014). However, a few other known species are not assigned, although they exhibit typical *japonica*-group features. The first goal of this paper is to provide a checklist as complete as possible of the current *japonica*-group species.

Various field collections in Guizhou Province, China were carried out by the colleagues of Hubei University in 2014 and 2016. Four males and 20 females were collected in these field explorations, among which one pair were captured during mating; thus, they are conspecific. Additionally, one male collected from Hainan Island was examined, and no differences from the Guizhou specimens were observed. All specimens possess certain characters associated with the *japonica*-group, but can be easily distinguished from the other *japonica*-group species. This species is new to science and is described under the name of *Clubiona grucollaris* sp. n.

Materials and methods

The checklist is based on an examination of specimens deposited in the "Centre for Behavioural Ecology and Evolution" (CBEE) and reviews of the published literature, including several recent world catalogues of spiders (Lin and Li 2016; World Spider Catalog 2017).

Spiders were fixed and preserved in 80% ethanol. Specimens were examined with an Olympus SZX7 stereomicroscope; details were studied with an Olympus BX51 compound microscope. Male palps and female epigynes were examined and illustrated after being dissected. Spermathecae were cleared in boiling KOH solution to dissolve soft tissues. Photos were made with a Cannon EOS70D digital camera mounted on an Olympus BX51 compound microscope. The digital images were taken and assembled using Helifocus 3.10 software package. The drawings were made using an Olympus drawing tube. Most of the hairs and macrosetae are not depicted in the palp and epigyne images.

All measurements were obtained using an Olympus SZX7 stereomicroscope and given in millimetres. Eye diameters are taken at widest point. The total body length does not include chelicerae or spinnerets length. Leg lengths are given as total length (femur, patella + tibia, metatarsus, tarsus). The type specimens of the new species are

deposited in College of Chemistry and Life Sciences, Guizhou Education University, Guiyang, Guizhou, China

Abbreviations used are:

A	epigynal atrium;	MOQL	length of MOQ;
AER	anterior eye row;	MOQA	MOQ anterior width;
ALE	anterior lateral eyes;	MOQP	MOQ posterior width;
AM	atrial margin;	PER	posterior eye row;
AME	anterior median eyes;	PLE	posterior lateral eyes;
AME–AME	distance between AMEs;	PME	posterior median eyes;
AME–ALE	distance between AME and ALE;	PME–PME	distance between PMEs;
BS	bursa;	PME–PLE	distance between PME and PLE;
C	conductor;	RTA	retrolateral tibial apophysis;
CD	copulatory duct;	SB	spermathecal bases;
CO	copulatory opening;	SH	spermathecal heads;
E	embolus;	SP	spermatheca;
FD	fertilization duct;	SS	spermathecal stalks;
MOQ	median ocular quadrangle;	TA	tegular apophysis.

The terminology used in text and figure legends follows Yu et al. (2012).

Taxonomy

Family Clubionidae Wanger, 1887

Genus *Clubiona* Latreille, 1804

The *japonica*-group

Diagnosis. In general, members of the *japonica*-group can be recognized by the following combination of characters (see also Dankittipakul and Singtripop 2008): dark colour pattern of carapace and dorsum of opisthosoma (Figs 1–3); the male retrolateral tibial apophysis small and not branched (Figs 5, 10), the sperm duct is sinuate and distinct (Figs 6–7), the embolus filiform or reduced (Figs 4–9, 11), the conductor sclerotized with variable shapes (e.g. a small tubercle in *C. picturata* Deeleman-Reinhold, 2001, long and filiform in *C. biembolata* Deeleman-Reinhold, 2001 and *C. filicata* O. Pickard-Cambridge, 1874, large and beak-shaped in *C. japonica* L. Koch, 1878 and *C. grucollaris* sp. n., Figs 4–12); the female epigyne has a relatively large atrium situated anteriorly, and the copulatory openings are located in rebordered groove of atrial margin (Fig 13). The *japonica*-group resembles the *corticalis*-group in having the similar simple palp bulb in male, the atrium and copulatory openings located anteriorly in female, however, the latter can be distinguished from the former by: (1)

the lack of a colour pattern on the opisthosoma; (2) the presence of a inflated tegulum with indistinct sperm duct; (3) the conductor membranous or absent; (4) the presence of a ventral tibial apophysis in many species; (5) the atrium is significantly smaller or absent; (6) copulatory openings are often located at anterior part of the epigynial plate, instead of close to the middle part in the *japonica*-group. All the provided *corticalis*-group characters are according to Deeleman-Reinhold (2001) and recent clubionid papers such as Wu and Zhang (2014) and Liu et al. (2016).

Taxonomic notes. Dankittipakul and Singtripop (2008) divided the Southeast Asia *japonica*-group into two lineages. It appears that this standard of division may also apply to the *japonica*-group from China. The species of the 1st lineage have a large sclerotized and beak-shaped conductor that aligned transversely on apical part of the bulb (Figs 4–6, 15–17), such as *C. circulata* Zhang & Yin, 1998, *C. calycina* Wu & Zhang, 2014 and *C. grucollaris* sp. n., etc. Members of the 2nd lineage share the following characters: the reduced embolus; a long and filiform conductor; and the embolus and conductor fused with each other, forming an apical appendage together and situated on the apical portion of the tegulum (Figs 7–12). The 2nd lineage includes *C. filicata* and *C. filoramula* Zhang & Yin, 1998.

In spite of the variable conductor in the male palp, the female genitalia of the two different lineages are very similar. The epigynial plate has a large atrium situated anteriorly, and the atrium is bounded by an atrial margin. The posterior atrial margins are often not rebordered. Copulatory openings relatively small, located in rebordered groove of basolateral atrial margin (Figs 13, 18). Vulva consisting of anterior spermathecae and posterior bursae. The bursae are membranous, larger than the spermathecae (Figs 14, 19).

Strictly based on the group characters, figures and text descriptions of 495 *Clubiona* species were checked one by one. In this work, we focused on ungrouped species, but also considered grouped species based on previous infrageneric revisions (Mikhailov 1990, 1991, 1995, 2002; Deeleman-Reinhold 2001). As a result, there are at least 31 *japonica*-group species all over the world (but mainly distributed in Asia) at present, among which 9 species were recorded from China, including a new species described here as *Clubiona grucollaris* sp. n. (see Table 1).

***Clubiona grucollaris* sp. n.**

<http://zoobank.org/25D9CD29-56E7-4D2E-9FBD-DB7C24DA5F1C>

Figs 1–2, 4–6, 13–20

Type material. Holotype ♂ (HUBU-GZ-IV-140057): China, Guizhou Province, Tongren City, Fanjing Mountain Nature Reserve (578 m; 21°51'12"N, 108°46'45"E), 3 August 2014, Jian Chen and Jianyong Li leg. Paratypes: 2 ♂ and 18 ♀, same data as holotype; 11 ♀, Tongren City, Mayanghe Nature Reserve (394 m; 28°46'53"N, 108°12'32"E), 15 August 2014, Mu Yan and Yaqian Fu leg; 1 ♂ and 1 ♀, Tongren City, Fanjing Mountain Nature Reserve (539 m; 27°50'42"N, 108°46'48"E), 6 April 2016, Hao Yu and Yang Zhong leg. 1 ♂, Hainan Province, Qiongzong County, Limu

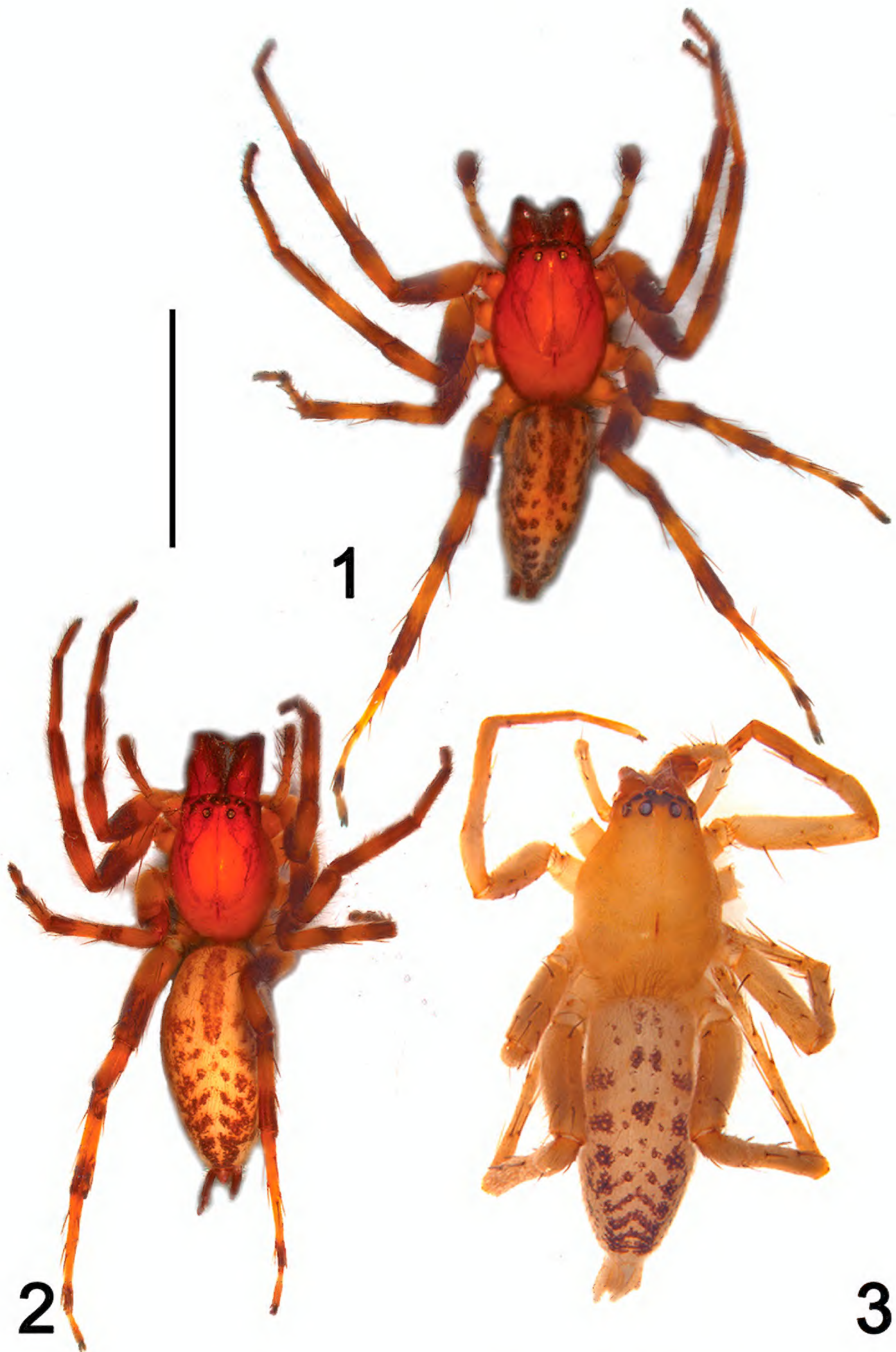
Table 1. A list of current *Clubiona japonica*-group species in alphabetical order.

	Species name	Known sex	Distribution
1	<i>C. annuligera</i> Lessert, 1929	♂♀	Congo, Mozambique
2	<i>C. biembolata</i> Deeleman-Reinhold, 2001	♂♀	Borneo
3	<i>C. bilobata</i> Dhali, Roy, Saha & Raychaudhuri, 2016	♀	India
4	<i>C. calycina</i> Wu & Zhang, 2014	♂♀	China
5	<i>C. campylacantha</i> Dankittipakul, 2008	♂♀	Thailand
6	<i>C. charleneae</i> Barrion & Litsinger, 1995	♂♀	Philippines
7	<i>C. circulata</i> Zhang & Yin, 1998	♂♀	China
8	<i>C. coreana</i> Paik, 1990	♂♀	Russia, Korea, China
9	<i>C. digitata</i> Dankittipakul, 2012	♂♀	Thailand
10	<i>C. drassodes</i> O. Pickard-Cambridge, 1874	♂♀	India, Bangladesh, China
11	<i>C. filicata</i> O. Pickard-Cambridge, 1874	♂♀	India, Bangladesh, Pakistan, Thailand, Myanmar, Laos, China
12	<i>C. filifera</i> Dankittipakul, 2008	♂♀	Thailand
13	<i>C. filoramula</i> Zhang & Yin, 1998	♂	China
14	<i>C. foliata</i> Keswani & Vankhede, 2014	♂♀	India
15	<i>C. gallagheri</i> Barrion & Litsinger, 1995	♀	Indonesia
16	<i>C. japonica</i> L. Koch, 1878	♂♀	Russia, China, Korea, Japan
17	<i>C. lala</i> Jäger & Dankittipakul, 2010	♀	Laos
18	<i>C. melanosticta</i> Thorell, 1890	♂♀	Thailand, Sumatra, Krakatau, New Guinea
19	<i>C. melanothele</i> Thorell, 1895	♀	Myanmar, Thailand, Laos, Sumatra
20	<i>C. munda</i> Thorell, 1887	♀	Myanmar
21	<i>C. nigromaculosa</i> Blackwall, 1877	♂♀	Seychelles, Réunion
22	<i>C. octoginta</i> Dankittipakul, 2008	♂♀	Thailand
23	<i>C. picturata</i> Deeleman-Reinhold, 2001	♂♀	Bali
24	<i>C. pila</i> Dhali, Roy, Saha & Raychaudhuri, 2016	♀	India
25	<i>C. pupula</i> Thorell, 1897	♂♀	Myanmar
26	<i>C. scandens</i> Deeleman-Reinhold, 2001	♂♀	Borneo
27	<i>C. submaculata</i> (Thorell, 1891)	♂♀	Nicobar Is.
28	<i>C. suthepica</i> Dankittipakul, 2008	♂♀	Thailand
29	<i>C. vigil</i> Karsch, 1879	♂♀	Russia, Korea, Japan, China
30	<i>C. vukomi</i> Jäger & Dankittipakul, 2010	♂	Thailand, Laos
31	<i>C. grucollaris</i> sp. n.	♂♀	China

Mountain Nature Reserve (417 m; 19°50'06"N, 109°47'52"E), 1 October 2009, Hao Yu and Zhenyu Jin leg.

Etymology. The specific name is an adjective and is derived from the combination of two Latin words: *gru* (crane) + *collaris* (with neck), referring to the long and cylindrical conductor base, which is like the neck of crane.

Diagnosis. *Clubiona grucollaris* sp. n. resembles the other *japonica*-group species by the similar habitus (Figs 1–3), but is consistently separable by its genitalia. Males of *Clubiona grucollaris* sp. n. appear to be closely related to *C. circulata* (Zhang and



Figures 1–3. Habitus of *Clubiona grucollaris* sp. n. and *C. filicata* O. Pickard-Cambridge, 1874, dorsal view. **1** *C. grucollaris* sp. n., male holotype **2** *C. grucollaris* sp. n., female paratype **3** *C. filicata* O. Pickard-Cambridge, 1874, male from Guangxi, China. Scale bars 5 mm (**1–2**); 2.5 mm (**3**).

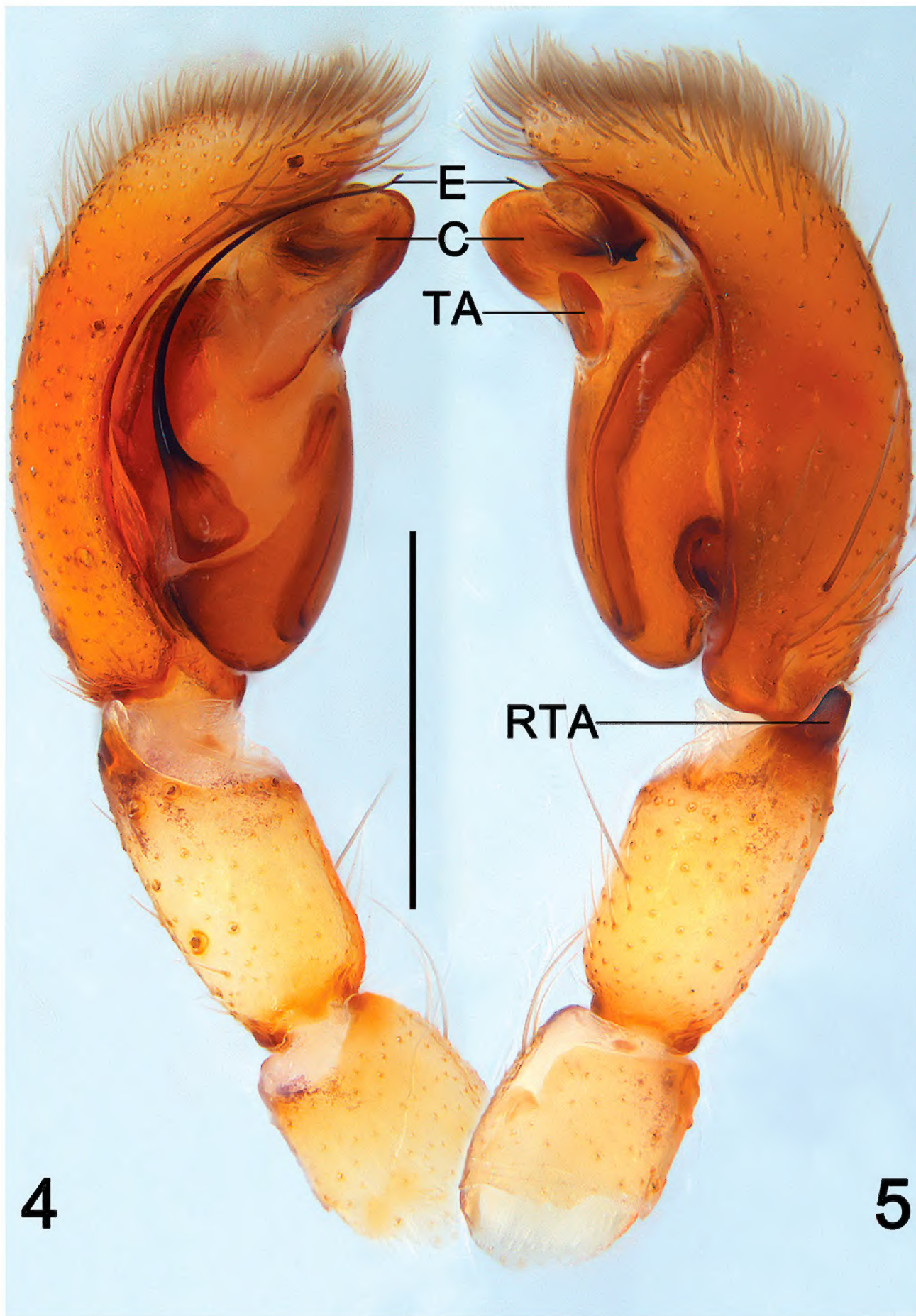
Yin 1998: 9, f. 1–3), *C. calycina* (Wu and Zhang 2014: 211, f. 1–12), and *C. suthepica* (Dankittipakul and Singtripop 2008: 42, f. 22–23, 56–58) in having the filiform embolus, and heavily sclerotized distal apex of beak-shaped conductor, but can be easily distinguished from these species by the crane's neck-shaped conductor base, and by the nearly U-shaped sperm ducts (Figs 4–6, 15–17). Females of *C. grucollaris* sp. n. are similar to *C. circulata* (Zhang and Yin 1998: 9, f. 4–5), *C. filifera* (Dankittipakul et al. 2012: 57, f. 18–19, 23–24) and *C. octoginta* (Dankittipakul and Singtripop 2008: 39, f. 17–19, 45–46) by the broad atrium situated anteriorly, and the membranous bursae situated posteriorly, but can be recognized by the more or less inverted trapezoidal atrium with M-shaped anterior margin, and by the spiral spermathecae (Figs 13–14, 18–19).

Description. Male. Total length 6.23–7.75. Holotype (Fig. 1): body 7.54 long; carapace 3.75 long, 2.42 wide; abdomen 3.96 long, 1.76 wide. *Carapace* brownish red, with a distinctive pattern on pars cephalica consisting of a pair of dark lateral bands and Ψ -shaped markings behind posterior eyes, markings starting from behind PME and PLE almost reaching dark fovea. Fovea longitudinal. In dorsal view, AER recurved and slightly narrowed than procurved PER. Eye diameters and interdistances: AME 0.16, ALE 0.18, PME 0.16, PLE 0.15; AME–AME 0.14, AME–ALE 0.19, PME–PME 0.38, PME–PLE 0.32. MOQL 0.51, MOQA 0.46, MOQP 0.72. *Chelicerae* protruding and coloured as carapace, three promarginal teeth and two retromarginal teeth. Endites brown, longer than wide. Labium dark brown, longer than wide. Sternum 2.10 long, 1.45 wide. *Abdomen* oval, brown, with conspicuous anterior tufts of hairs, dorsum with dense grey hairs and two pairs of muscle impression, and with broken dark median band, reaching half of opisthosoma length, posteriorly with paired dark markings consisting of numerous stripes and spots; venter brown. *Legs* brownish yellow, all legs with conspicuous dark brown annuli in the distal parts of femur, patella, tibia, metatarsus and tarsus. Measurements of legs: I 8.60 (2.52, 3.20, 1.70, 1.20), II 9.07 (2.64, 3.46, 2.00, 0.97), III 7.49 (2.20, 2.40, 2.06, 0.83), IV 10.43 (2.86, 3.57, 2.82, 1.19).

Palp (Figs 4–6, 15–17). RTA dark, small but strong, triangular; cymbium longer than wide, bulb nearly spherical and proapically membranous; sperm duct distinct and sinuate, U-shaped or reversed S-shaped; embolus slender and filiform, originated at 8–9 o' clock position in prolateral view, its tip slightly overpasses the genital bulb; conductor with a heavily sclerotized and beak-shaped apex, its base part membranous and crane's neck-shaped; tegular apophysis small and petal-shaped in retrolateral view.

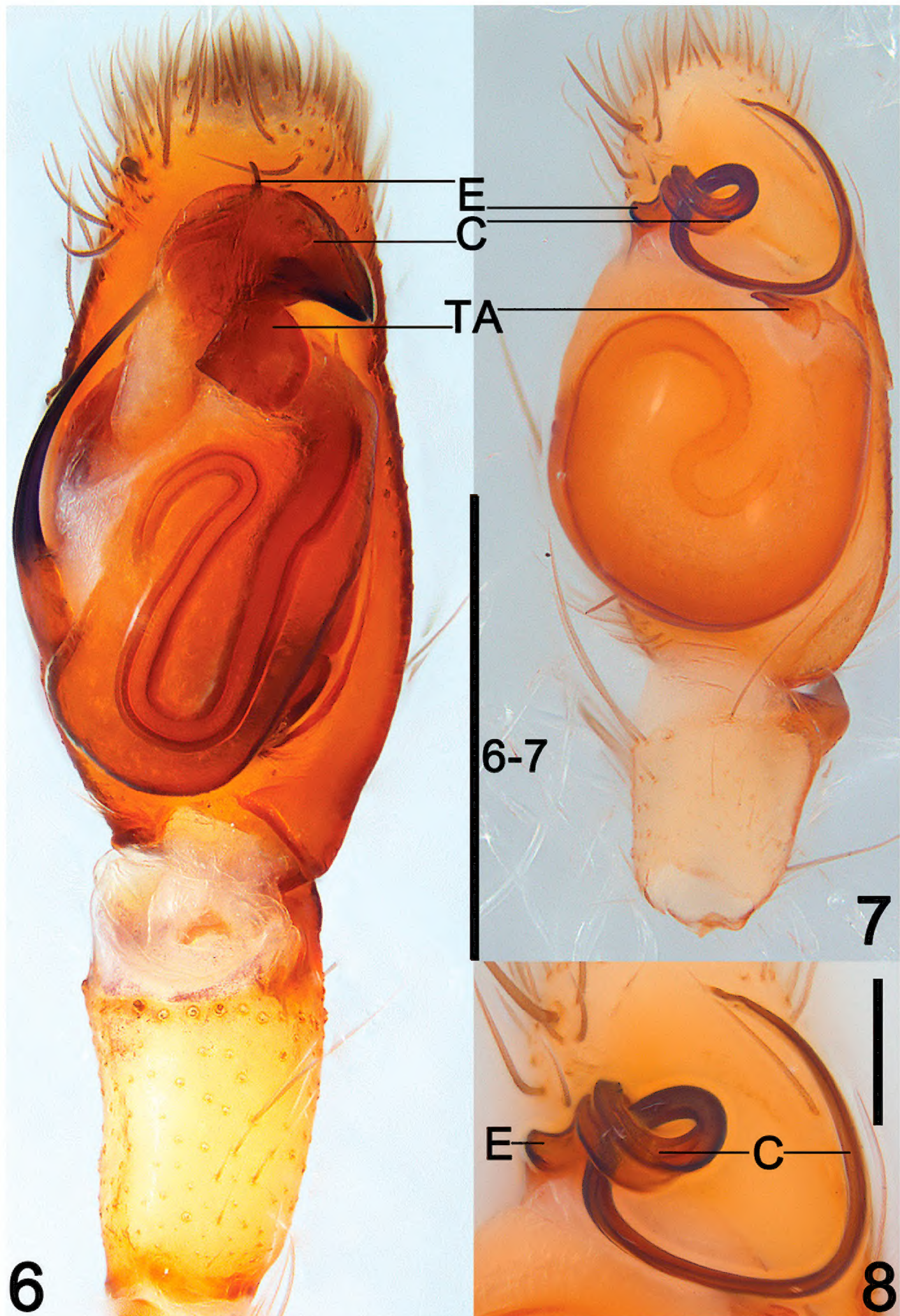
Female. Total length 6.53–7.83. One paratype (Fig. 2) measured, body 7.70 long; carapace 3.03 long, 2.08 wide; abdomen 4.55 long, 2.41 wide. Eye sizes and interdistances: AME 0.13, ALE 0.14, PME 0.15, PLE 0.12; AME–AME 0.14, AME–ALE 0.16, PME–PME 0.34, PME–PLE 0.27. MOQL 0.49, MOQL 0.42, MOQP 0.66. Sternum 1.71 long, 1.18 wide. Measurements of legs: I 6.40 (1.83, 2.36, 1.24, 0.97), II 7.04 (2.02, 2.71, 1.41, 0.89), III 5.02 (1.60, 1.83, 1.33, 0.27), IV 8.43 (2.32, 2.82, 2.44, 0.86). General characters as in male, but slightly larger in size and darker in colour.

Epigyne (Figs 13–14, 18–19). Atrium large and nearly inverted trapezoidal, with a shallow depression, located at anterior portion of epigynal plate, anterior atrial margin

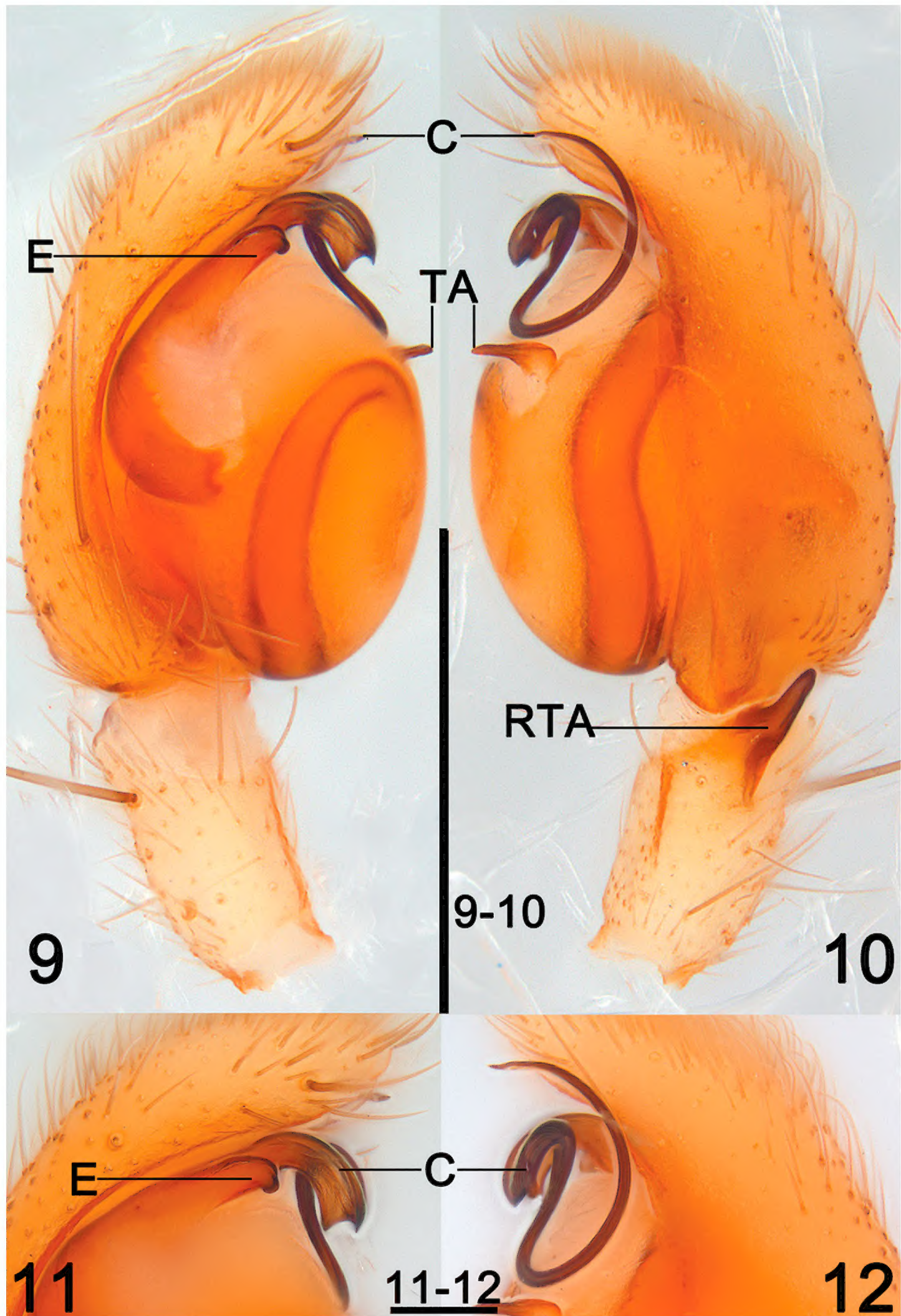


Figures 4–5. *Clubiona grucollaris* sp. n., male holotype. **4** left palp, prolateral view **5** same, retrolateral view. Scale bars 0.5 mm.

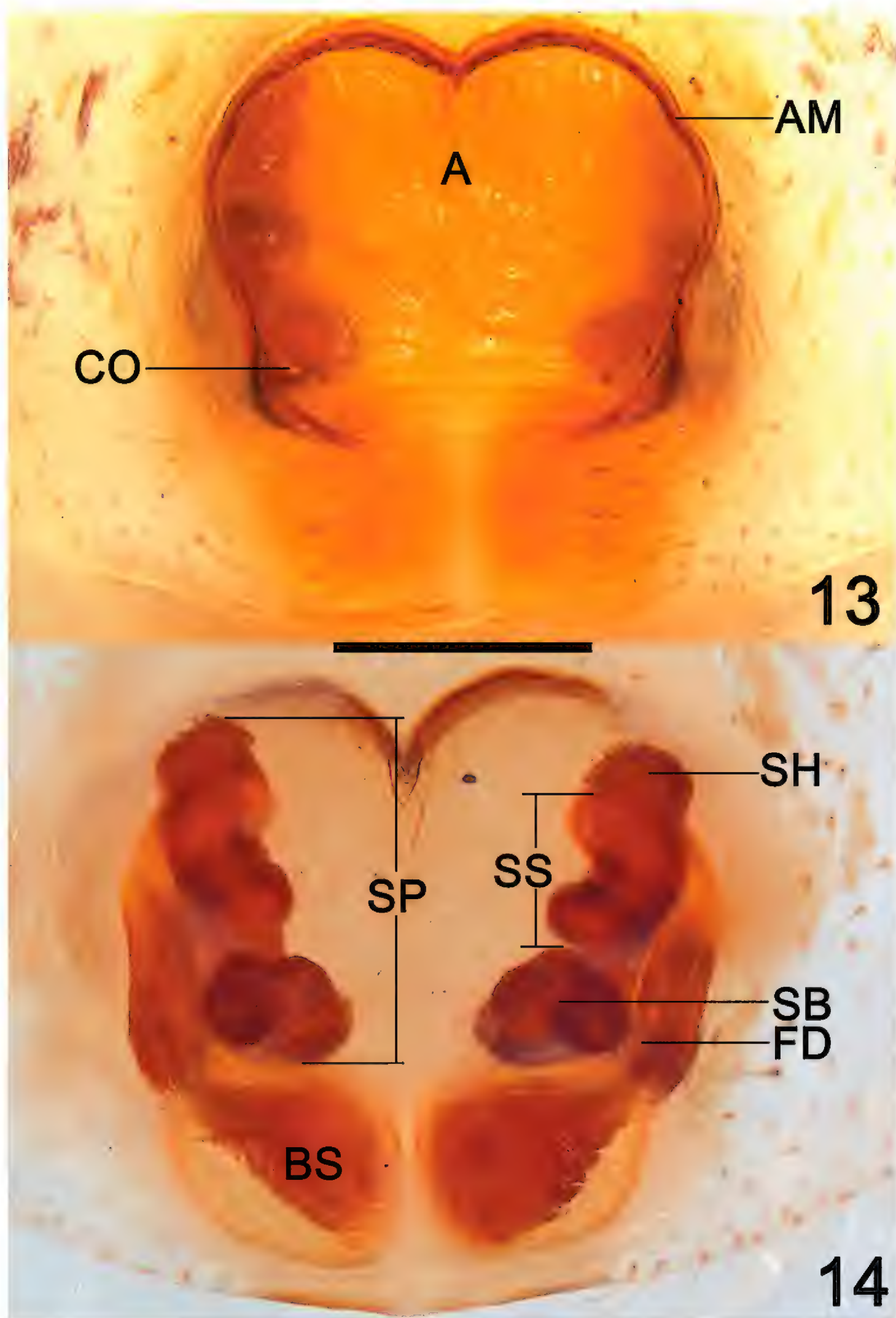
“M” shaped; spermathecae and bursae are prominently through epigynal plate in ventral view; two copulatory openings located at basolateral atrial borders; spermathecae consisting of papilliform base, tubular stalk and ovoid head, ascend spirally; bursae globular and translucent; fertilization ducts short, acicular.



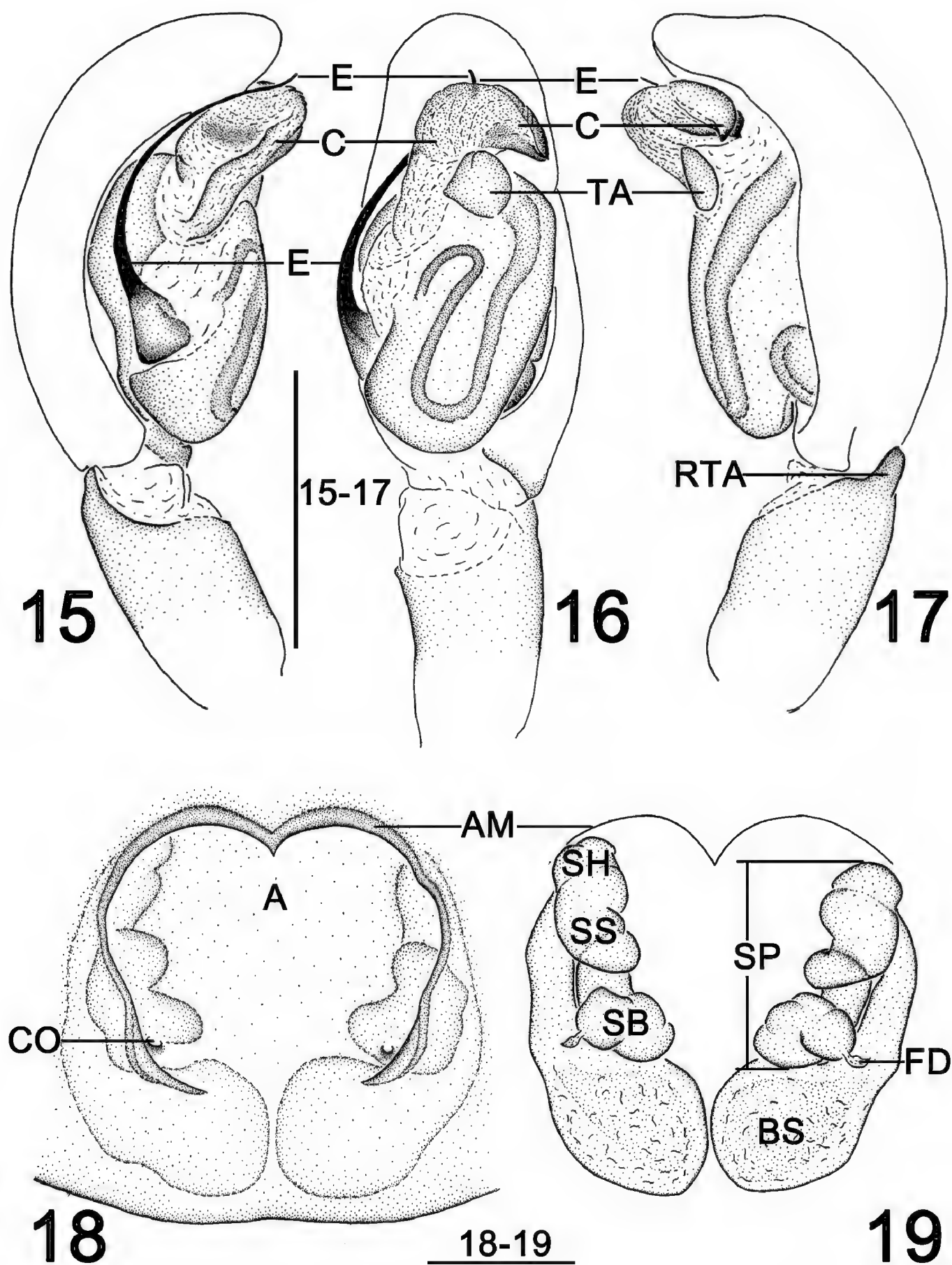
Figures 6–8. Left male palp of *Clubiona grucollaris* sp. n. and *C. filicata* O. Pickard-Cambridge, 1874, ventral view. **6** *C. grucollaris* sp. n., male holotype **7** *C. filicata* O. Pickard-Cambridge, 1874, male from Guangxi, China **8** *C. filicata* O. Pickard-Cambridge, 1874 from Guangxi, China, apical appendage of tegulum, ventral. Scale bars 0.5 mm (**6–7**); 0.1 mm (**8**).



Figures 9–12. *Clubiona filicata* O. Pickard-Cambridge, 1874, male from Guangxi, China. **9** left palp, prolateral view **10** same, retrolateral view **11** apical appendage of tegulum, prolateral view **12** same, retrolateral view. Scale bars 0.5 mm (**9–10**); 0.1 mm (**11–12**).



Figures 13–14. *Clubiona grucollaris* sp. n., female paratype. **13** epigyne, ventral view **14** vulva, dorsal view. Scale bars 0.2 mm.



Figures 15–19. *Clubiona grucollaris* sp. n., male holotype and female paratype. **15** left palp, prolateral view **16** same, ventral view **17** same, retrolateral view **18** epigyne, ventral view **19** vulva, dorsal view. Scale bars 0.5 mm (**15–17**); 0.2 mm (**18–19**).

Natural history. *Clubiona grucollaris* sp. n. mainly inhabit the upper levels of the forest and most specimens were collected by canopy fogging, while a few spiders were obtained by beating twigs and branches of vegetation. The type locality, Fanjing Moun-

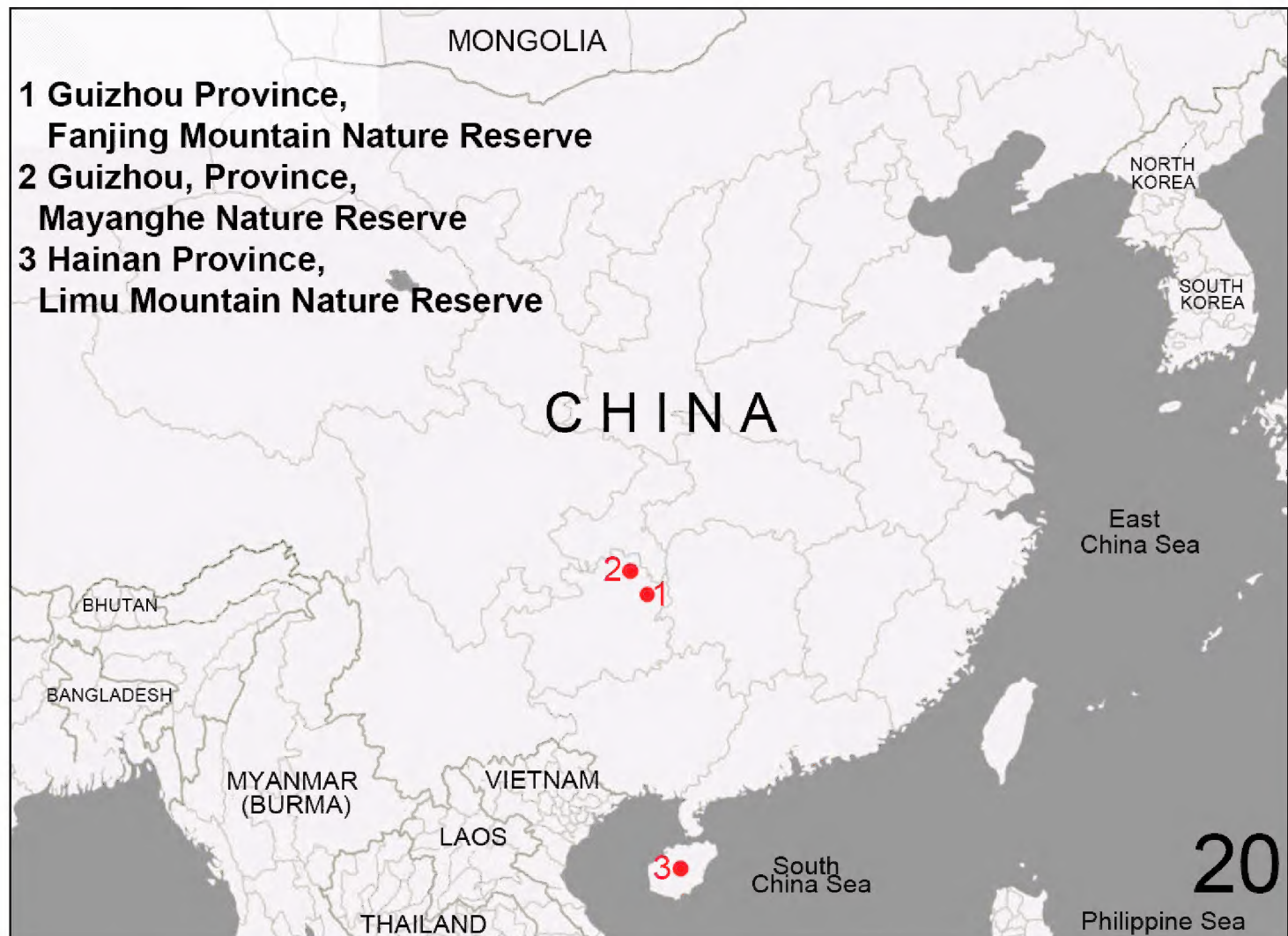


Figure 20. Distribution of *Clubiona grucollaris* sp. n. (red circles).

tain Nature Reserve, extending from 27°49'50" to 28°01'30"N and 108°49'30" to 108°18'30"E, is the core zone and the highest peak of the Wuling Mountains, and is known for its high floral biodiversity (Wang et al. 2015). The evergreen broad-leaved forests, where the holotype was obtained, are located in low elevation areas (alt. 300–600 m) of the Reserve.

Distribution. Guizhou Province (Mt. Fanjing, Mayanghe natural reserves) and Hainan Island (Mt. Limu), China (Fig. 20).

Clubiona filicata O. Pickard-Cambridge, 1874

Figs 3, 7–12

Clubiona filicata O. P.-Cambridge, 1874: 413, fig. 35 (description of ♂, ♀); Gravely 1931: 261, fig. 16d; Tikader and Biswas 1981: 69, figs 120–121; Gong 1989: 109, figs 1–13; Zhang and Hu 1989: 58, figs 7, 22; Majumder and Tikader 1991: 23, figs 30–35; Biswas and Raychaudhuri 1996: 199, figs 27–33; Song et al. 1999: 415, figs 245L–M, 248F–G; Dankittipakul and Singtripop 2008: 37, figs 5–7, 30–33; Dankittipakul et al. 2012: 59, figs 25–31; Yin et al. 2012: 1095, figs 575a–e.

Clubiona distincta Thorell, 1887: 48

Clubiona swatowensis Strand, 1907: 562 (Description of ♀); Strand 1909: 39, fig. 24.

Examined material. 1 ♂, China, Guangxi Province, Guilin City, Guilin Tea Science and Research Institute (150 m; 27°17'48"N, 110°21'34"E), 3 October 2010.

Description. *Male* (Figs 3, 7–12). For details see Dankittipakul and Singtripop (2008).

Natural history. The examined specimen was collected by a pitfall trap set in a tea plantation.

Distribution. India, Bangladesh, Pakistan, Thailand, Myanmar, Laos, China (see Table 1).

Acknowledgements

The manuscript benefited from comments by Dr. Cor J. Vink (Natural History Canterbury Museum, New Zealand), and two anonymous reviewers. This work was supported by the National Natural Sciences Foundation of China (NSFC-31702006/31272268/31172113), the Special Foundation of Ministry of Science and Technology of the People's Republic of China (MOST grant no. 2014FY110100), the Natural Science Foundation of Guizhou Province (J [2014] 2146) and PhD grant from Guizhou Normal University (11904/0517069). We thank the staff of the Centre for Behavioural Ecology and Evolution (CBEE, Hubei University) for all their help and support throughout this study.

References

- Barrion AT, Litsinger JA (1995) *Riceland Spiders of South and Southeast Asia*. CAB International, Wallingford, UK, 700 pp.
- Biswas V, Raychaudhuri D (1996) Clubionid spiders of Bangladesh – I: Genus *Clubiona* Latreille. *Proceedings of Recent Advances in Life Sciences, Dibrugarh University* 1: 191–210.
- Blackwall J (1877) A list of spiders captured in the Seychelle Islands by Professor E. Perceval Wright, M. D., F. L. S.; with descriptions of species supposed to be new to arachnologists. Notes and preface by the Rev. O. P.-Cambridge, M.A., C.M.Z.S., etc. *Proceedings of the Royal Irish Academy* (2)3: 1–22.
- Dankittipakul P, Singtripop T (2008) Five new species of the spider genus *Clubiona* Latreille (Araneae: Clubionidae) from Thailand. *Zootaxa* 1747: 34–60.
- Dankittipakul P, Tavano M, Chotwong W, Singtripop T (2012) New synonym and descriptions of two new species of the spider genus *Clubiona* Latreille, 1804 from Thailand (Araneae, Clubionidae). *Zootaxa* 3532: 51–63.
- Deeleman-Reinhold CL (2001) *Forest spiders of South East Asia: with a revision of the sac and ground spiders (Araneae: Clubionidae, Corinnidae, Liocranidae, Gnaphosidae, Prodidomidae and Trochanterriidae)*. Brill, Leiden, 591 pp.
- Dhali DC, Roy TK, Saha S, Raychaudhuri D (2016) On the new sac spiders (Araneae: Clubionidae) of Dooars, West Bengal, India. *World Scientific News* 50: 278–305.

- Dondale CD, Redner JH (1976) A rearrangement of the North American species of *Clubiona*, with descriptions of two new species (Araneida: Clubionidae). Canadian Entomologist 108: 1155–1165. <https://doi.org/10.4039/Ent1081155-11>
- Dondale CD, Redner JH (1982) The insects and arachnids of Canada, Part 9. The sac spiders of Canada and Alaska, Araneae: Clubionidae and Anyphaenidae. Research Branch Agriculture Canada Publication 1724: 1–194.
- Edwards RJ (1958) The spider subfamily Clubioninae of the United States, Canada and Alaska (Araneae: Clubionidae). Bulletin of the Museum of Comparative Zoology, Harvard 118(6): 365–436.
- Gertsch WJ (1941) New American spiders of the family Clubionidae. I. American Museum Novitates 1147: 1–20.
- Gong JX (1989) First record of *Clubiona filicata* Cambridge for China (Araneae: Clubionidae). Wuyi Science Journal 7: 109–113.
- Gravely FH (1931) Some Indian spiders of the families Ctenidae, Sparassidae, Selenopidae and Clubionidae. Records of the Indian Museum, Calcutta 33: 211–282.
- Jäger P, Dankittipakul P (2010) Clubionidae from Laos and Thailand (Arachnida: Araneae). Zootaxa 2730: 23–43. <https://doi.org/10.11646/zootaxa.2730.1.2>
- Karsch F (1879) Baustoffe zu einer Spinnenfauna von Japan. Verhandlungen des Naturhistorischen Vereins der Preussischen Rheinlande und Westfalens 36: 57–105.
- Keswani S, Vankhede G (2014) Description of one new species of the genus *Clubiona* (Araneae: Clubionidae) from India. Indian Journal of Arachnology 3(1): 35–40.
- Koch L (1878) Japanesische Arachniden und Myriapoden. Verhandlungen der Kaiserlich-Königlichen Zoologisch-Botanischen Gesellschaft in Wien 27: 735–798.
- Lessert R (1929) Araignées du Congo recueillies au cours de l'expédition organisée par l'American Museum (1909–1915). Troisième partie. Revue Suisse de Zoologie 36: 103–159. <https://doi.org/10.5962/bhl.part.117628>
- Liu P, Peng XJ, Yan HM (2016) Five new species of the *Clubiona corticalis* species group (Araneae, Clubionidae) from China. Zootaxa 4184(3): 561–575. <https://doi.org/10.11646/zootaxa.4184.3.10>
- Li SQ, Lin YC (2016) Species Catalogue of China. Volume 2. Animals. Invertebrates (I), Arachnida: Araneae. Science Press, Beijing, 549 pp.
- Lohmander H (1944) Vorläufige Spinnennotizen. Arkiv för zoologi 35(A, 16): 1–21.
- Majumder SC, Tikader BK (1991) Studies on some spiders of the family Clubionidae from India. Records of the Zoological Survey of India, Occasional Paper 102: 1175.
- Mikhailov KG (1990) The spider genus *Clubiona* Latreille 1804 in the Soviet Far East, 1 (Arachnida, Aranei, Clubionidae). Korean Arachnology 5(2): 139–175.
- Mikhailov KG (1991) The spider genus *Clubiona* Latreille 1804 in the Soviet Far East, 2 (Arachnida, Aranei, Clubionidae). Korean Arachnology 6(2): 207–235.
- Mikhailov KG (1995) Erection of infrageneric groupings within the spider genus *Clubiona* Latreille, 1804 (Aranei Clubionidae): a typological approach. Arthropoda Selecta 4(2): 33–48.
- Mikhailov KG (2002) The spider genus *Clubiona* Latreille, 1804 (Aranei: Clubionidae) in the fauna of the former USSR: 2003 update. Arthropoda Selecta 11: 283–317.

- Paik KY (1990) Korean spiders of the genus *Clubiona* (Araneae: Clubionidae) I. Description of eight new species and five unrecorded species from Korea. Korean Arachnology 5(2): 85–129.
- Pickard-Cambridge O (1874) On some new species of *Drassides*. Proceedings of the Zoological Society of London 42(3): 370–419, Pl. LI–LII. <https://doi.org/10.1111/j.1096-3642.1874.tb02495.x>
- Simon E (1932) Les arachnides de France. Tome VI. Synopsis générale et catalogue des espèces françaises de l'ordre des Araneae; 4^e partie. Paris, 6: 773–978.
- Song DX, Zhu MS, Chen J (1999) The Spiders of China. Hebei University of Science and Technology Publishing House, Shijiazhuang, 640 pp.
- Strand E (1907) Vorläufige Diagnosen süd- und ostasiatischer Clubioniden, Ageleniden, Pisauriden, Lycosiden, Oxyopiden und Salticiden. Zoologischer Anzeiger 31: 558–570.
- Strand E (1909) Süd- und ostasiatische Spinnen. II. Fam. Clubionidae. Fam. Salticidae. Abhandlungen der Naturforschenden Gesellschaft Göttingen 26: 1–128.
- Thorell T (1887) Viaggio di L. Fea in Birmania e regioni vicine. II. Primo saggio sui ragni birmani. Annali del Museo Civico di Storia Naturale di Genova 25: 5–417.
- Thorell T (1890) Studi sui ragni Malesi e Papuani. IV, 1. Annali del Museo Civico di Storia Naturale di Genova 28: 1–419.
- Thorell T (1891) Spindlar från Nikobarerna och andra delar af södra Asien. Bihang till Kongliga Svenska Vetenskaps-Akademiens Handlingar 24(2): 1–149.
- Thorell T (1895) Descriptive catalogue of the spiders of Burma. London, 1–406.
- Thorell T (1897). Viaggio di Leonardo Fea in Birmania e regioni vicine. LXXIII. Secondo saggio sui Ragni birmani. I. Parallelodontes. Tubitelariae. Annali del Museo Civico di Storia Naturale di Genova (2): 161–267.
- Tikader BK, Biswas B (1981) Spider fauna of Calcutta and vicinity: Part-I. Records of the Zoological Survey of India, Occasional Paper 30: 1–149.
- World Spider Catalog (2017) World spider catalog. Natural History Museum Bern. <http://wsc.nmbe.ch>, version 18.0 [accessed on 1 November 2017]
- Wang LY, Chen HM, Zhou KX, Zhang F, Zhang ZS (2015) Diversity of spiders in Fanjing Mountain Nature Reserve, Guizhou, China, I: Six new species of Phrurolithidae (Araneae). Zootaxa 4012(3): 447–464. <https://doi.org/10.11646/zootaxa.4012.3.2>
- Wu PL, Zhang F (2014) A new species of the spider genus *Clubiona* from China, with description of the male of *Clubiona qiyunensis* (Araneae: Clubionidae). Acta Zoologica Academiae Scientiarum Hungaricae 60(3): 207–215.
- Wunderlich J (2011) Extant and fossil spiders (Araneae). Beiträge zur Araneologie 6: 1–640.
- Yin CM, Peng XJ, Yan HM, Bao YH, Xu X, Tang G, Zhou QS, Liu P (2012) Fauna Hunan: Araneae in Hunan, China. Hunan Science and Technology Press, Changsha, 1590 pp.
- Yu H, Sun ZX, Zhang GR (2012) New taxonomic data on the sac spiders (Arachnida: Araneae: Clubionidae) from China, with description of a new species. Zootaxa 3299: 44–60.
- Zhang GR, Hu YJ (1989) Arrangement of some Chinese species of *Clubiona* (Araneae: Clubionidae). Journal of Xiangtan Normal University 6: 53–61.
- Zhang YJ, Yin CM (1998) Six new species of the spiders of genus *Clubiona* from China (Araneae: Clubionidae). Acta Zootaxonomica Sinica 23(1): 9–17.